

- g) According to the Stressed Oil Volume theory, the breakdown strength is (1)
 a) Directly proportional to the stressed oil volume
 b) Directly proportional to the square of the stressed oil volume
 c) Inversely proportional to the stressed oil volume
 d) None of these.
- h) Write application of high voltage engineering. (1)
- i) Draw circuit of voltage doubler. (1)
- j) Define internal discharge in solid breakdown. (1)
- k) List various gases used for gases breakdown. (1)
- l) Write properties of liquid di-electrical. (1)
- m) Write advantages of high voltage. (1)
- n) Define impulse wave. (1)

Attempt any four questions from Q-2 to Q-8

- Q-2 Attempt all questions (14)**
 (a) Explain liquid purification system with test cell. (07)
 (b) Write short note on following: (07)
 (1) Intrinsic breakdown (2) Electromechanical breakdown.
- Q-3 Attempt all questions (14)**
 (a) Define the Townsend first & second ionization co-efficient. Also derive the equation for second ionization co-efficient $I = I_0 e^{\alpha d} / (1 - \gamma (e^{\alpha d} - 1))$. (07)
 (b) Draw neat and clean diagram and explain Paschen's laws. (07)
- Q-4 Attempt all questions (14)**
 (a) Write short note on following : (07)
 (1) Stress oil volume theory (2) Bubble theory.
 (b) Explain treeing and tracking effect in solid breakdown. (07)
- Q-5 Attempt all questions (14)**
 (a) Explain in brief Van de Graff generator for generation of high voltage dc. (07)
 (b) Why a Cockcroft – Walton circuit preferred for voltage multiplier circuits? (07)
 Explain its working with a schematic diagram.
- Q-6 Attempt all questions (14)**
 (a) Draw and explain dlatatron circuits. (07)
 (b) Briefly explain cascade transformer with neat and clean diagram. (07)
- Q-7 Attempt all questions (14)**
 (a) Explain measurement of ac, dc and impulse voltage measurement with sphere gap arrangement. (07)
 (b) Write short note on generating voltmeter. (07)
- Q-8 Attempt all questions (14)**
 (a) Write short note on testing of transformer. (07)
 (b) Explain measurement of capacitance with Schering bridge. (07)

